MULTIFUNCTION CNC BOARD
WIRING GUIDE
C11 REV5

INPUT PINS:
This board is provided with pull-down resistors on all inputs and output pins. You can use NO (Normally Open) or NC (Normally Closed) switches for connecting home, limit, or e-stop switches. +5vdc for a high or ground for a low can be provided for valid input signals. Read the notes at the bottom of the page.

SOLID STATE RELAY:
A Solid State Relay is provided for controlling AC devices. This relay cannot be used with DC currents. Connect it just as you would connect any other switch.

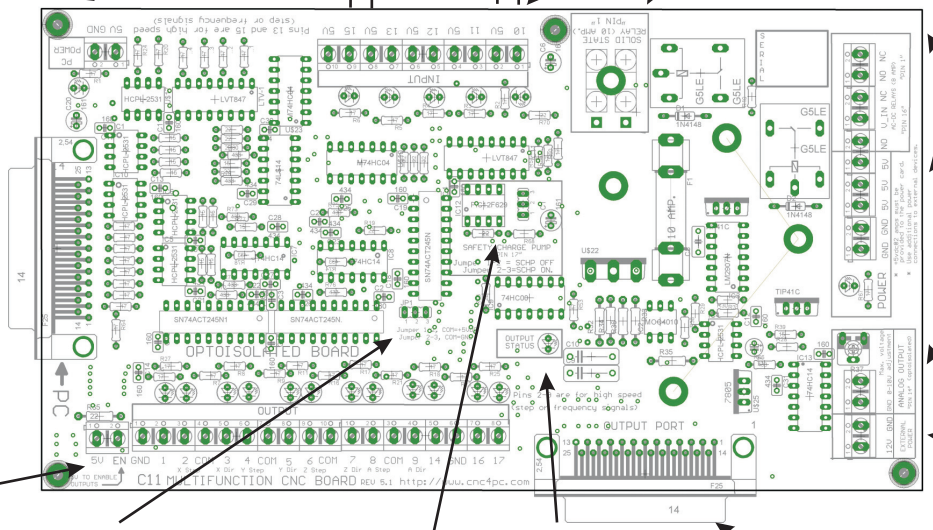
2 ELECTROMECHANICAL RELAYS:
Two eletromechanical relays are provided with NO (Normally Open) and NC (Normally Closed) connections. Both relays share the common VCC_IN, but one reacts to Pin 1 and the other one to Pin16. That way Pin1 can be used for the solid state relay or the eletromechanical relay. Please note that both can be used at the same time.

POWER FROM YOUR PC:
Provide +5vdc from your computer. You can use the provided USB Power Cable or wire it directly to your Pc's power supply.

Home or Limit Switch

E-Stop

To EN pin



POWER CONNECTIONS:
Provide +5vdc at 2 amps. . There are extra terminals to ease powering of external devices.

ANALOG OUTPUT:
The analog output is optoisolated. An external +12vdc power source is required. This circuit consumes less than 10milliamps. Use the pot for fine tuning the output voltage. If replacing a potentiometer, use the 0-10vdc for the connecting to the wiper connection and make the grounds common. In order to adjust your final voltage, set your control software at max speed, then turn the pot till you reach the desired output voltage.

NOTES:
1.All inputs and outputs are provided with pull-down resistors.
2. If you need to connect a device that outputs more than 5vdc, you can use a resistor to limit the current. Use the following resistor values:
10 vdc - 1 MOhm
12 vdc - 1.5 MOhm
24 vdc - 3.9 MOhm.
To use these resistor values your card must be powered with 5vdc. If you are powering your board with a different voltage unexpected results can happen., including damage to the board.

WARNING:
These grounds must be common with the grounds of the speed control connection, but must be kept isolated from the grounds of the board.

The EN Pin:
In all cases the EN pin must receive +5vdc in order to enable the inputs. You can hardwire the EN pin with +5vdc if you do not need to install an external enable switch. If your E-Stop works as NC (Normally Closed) with a +5vdc signal, you can also send this signal to the EN. That way your system would have to wait for the control software to stop.

COM TERMINALS:
Place the jumper in the appropriate position to select +5VDC or GND for the COM terminals.

OUTPUT STATUS:
This LED indicates if the outputs are enabled.

SAFETY CHARGE PUMP:
The Safety Charge Pump now is controlled through a microcontroller. The first switch enables and disables the SCHP, the second switch allows to select the precision you want to have signal sampled. In all cases the external enable pin "EN" must have +5vdc in order to have the outputs enabled.

OUTPUT PORT:
An additional output port is provided for connecting directly to a any exisiting setup, or a driver that already comes with a DB25 connector. Such as Xylotex or HobbyCNC. By doing this you would optoisolate your system, you will add all the features of the board and still have access to all the pins.

This card must be powered while your system is under power. Keep in mind noise can be transmitted into output signals that could trigger unwanted actions in your system.

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